



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

PD

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/280,270 03/29/99 MACEVICZ S 5525-0015.21

022918 HM12/0112
DEHLINGER & ASSOCIATES
350 CAMBRIDGE AVENUE SUITE 250
P O BOX 60850
PALO ALTO CA 94306-0850

EXAMINER

LU, F

ART UNIT

PAPER NUMBER

1655

5

DATE MAILED:

01/12/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/280,270

Applicant(s)
Macevicz

Examiner
Frank Lu

Group Art Unit
1655



☒ Responsive to communication(s) filed on Mar 29, 1999.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1 and 20-31 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1, 20, 21, and 26 is/are rejected.

☒ Claim(s) 22-25, 27, and 29-31 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1655

DETAILED ACTION

The art unit designated for this application has changed. Applicants are hereby informed that future correspondence should be directed to Art Unit 1655.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Nikiforov *et al.*, (US patent 5,679,524, filed on August 9, 1996). Nikiforov *et al.* teach ligase/polymerase mediated genetic bit analysis of single nucleotide polymorphism and its use in genetic analysis. The method for determining the identity of a nucleotide present at a preselected single nucleotide site in a target nucleic acid molecule comprises the following steps: (1) immobilizing a first

Art Unit: 1655

oligonucleotide (either linker or primer) to a solid support; (2) forming a hybridized duplex by incubating the immobilized first oligonucleotide in the presence of target molecule (polynucleotide), and in the further presence of a second oligonucleotide (either linker or primer). The first and second oligonucleotides hybridize to the target molecule in different regions which are separated from one another by the preselected site (one nucleotide); (3) ligating the first and second oligonucleotides in the presence of a polymerase, a ligase and a nucleotide triphosphate mixture; (4) separating any non-covalently bonded target or second oligonucleotide; (5) determining the identity of the nucleotide of the preselected site by determining whether the second oligonucleotide or one of the nucleoside triphosphate has become immobilized to the solid support. This prior art reference meets the limitations of the claim.

3. Claims 20, 21, and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pease *et al.*, (Proc. Natl. Acad. Sci. USA, 91, 5022-5026, 1994). Pease *et al.*, teach light-generated oligonucleotide arrays for rapid DNA sequence analysis. In this study, 256 single-stranded, different octanucleotides were immobilized on a microchip. The hybridization pattern of fluorescently labeled oligonucleotide target was then detected by epifluorescence microscope (page 5022, abstract). This prior meets the limitation of the claim.

In the alternative, an assay for oligonucleotide array is performed in a single hybridization temperature so that the most of oligonucleotides in an array can be efficiently used (page 5024, column 1, the fifth paragraph). This suggests that the different-sequence, single-stranded

Art Unit: 1655

oligonucleotides in an array have the same free energy of duplex formation and belong to the same stringency class. Thus the claims would have been obvious to one having ordinary skill in the art at the invention was made within the meaning of 35 U.S.C. 103(a). According, the claimed invention as whole was at least prima facie obvious, if not anticipated by the reference.

Allowable Subject Matter

3. Claims 22-25, 27, and 29-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR & 1.821 (a) (1) and (a) (2).

However, this application does not contain SEQ NO: 9-13, as a separate part of the disclosure on paper copy, a "sequence listing" as required by 37 C.F.R.1.821(c). Applicants are given the same response time regarding this matter to comply as that set forth to respond to this office action.

Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CAR § 1.6(d)). The CM Fax Center number is either (703) 308-4242 or (703)305-3014.

Art Unit: 1655

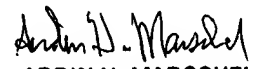
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Lu, Ph.D., whose telephone number is (703) 305-1270. The examiner can normally be reached on Monday-Friday from 9 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones, can be reached on (703) 308-1152.

Any inquiry of a general nature or relating to the status of this application should be directed to the Chemical Matrix receptionist whose telephone number is (703) 308-0196.

Frank Lu

January 6, 2000


ARDIN H. MARSCHEL
PRIMARY EXAMINER